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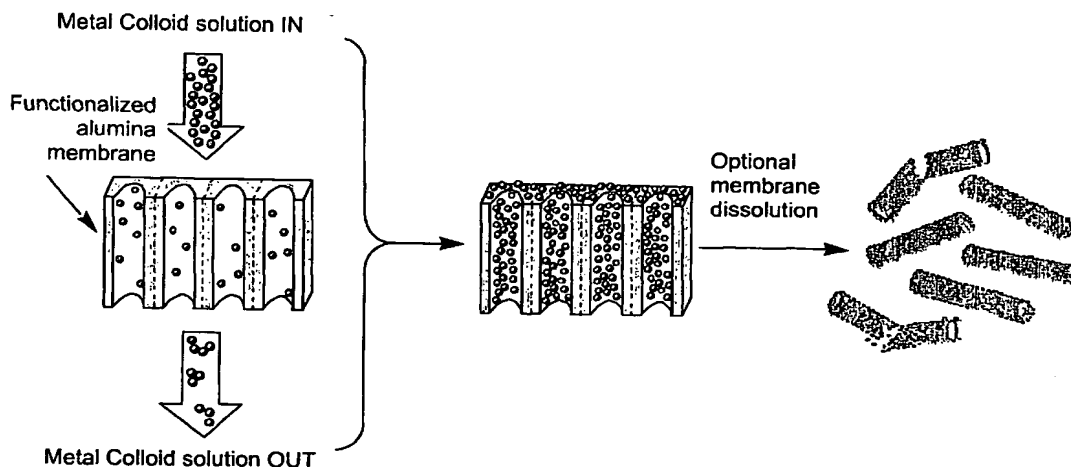
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- (71) Applicant (for all designated States except US): **YEDA RESEARCH AND DEVELOPMENT COMPANY LTD.** [IL/IL]; At The Weizmann Institute of Science, P.O.Box 95, 76100 Rehovot (IL).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): **RUBINSTEIN, Israel** [IL/IL]; The Weizmann Institute of Science, 76100 Rehovot (IL). **VASKEVICH, Alexander** [IL/IL]; 33 Eisenberg Street, 76287 Rehovot (IL). **LAHAV, Michal** [IL/IL]; 3 Mera Street, Ramat Beit Hakerem, 93715 Jerusalem (IL).
- (74) Agent: **REINHOLD COHN AND PARTNERS**; P.O.Box 4060, 61040 Tel Aviv (IL).
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[Continued on next page]

(54) Title: METHOD FOR PREPARING NANOTUBES FROM NANOPARTICLES AND NANOTUBES PRODUCED THEREBY



(57) Abstract: The present invention provides a new method for the synthesis of a novel kind of high-surface-area structures. A substrate is provided having pores or channels functionalized with an agent capable of binding nanoparticles, said pores or channels having a cross-sectional size of from about several nanometers to about 100 microns. A colloid solution comprising stabilized nanoparticles and a solvent is passed through said substrate, so as to bind and form more than one layer of nanoparticles in the pores or channels where the bound nanoparticles spontaneously coalesce to form a coherent material having a substantially hollow structure and being composed of nanoparticles. The structures can be modified by deposition of another material, to form structures coated by the other material on their surface. The structures (with or without modification) can be separated from the porous substrate to obtain a material having a desired structure, for example a tubular structure.

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INTERNATIONAL SEARCH REPORT

International application No.

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A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : B05D 7/22
US CL : 427/181

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
U.S. : 427/181, 189, 190, 191, 230, 235

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
Please See Continuation Sheet

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X --- Y	Martin, C. R. et al. Investigations of the Transport Properties of Gold Nanotubule Membranes J. Phys Chem. B February 2001, Vol. 105, pages 1925-1934.	1,3-8,10,16,18,24-26,28,30,32 ----- 2,9,11,17,19-21,23,29,27,31,33
Y	Martin, C.R. Nanomaterials: A Memberane-Based Synthetic Approach Science December 1994, Vol. 266, pages 1961-1966.	2,9,11,20,21,23,29,31,33
A	Hulteen, J.C. et al. Introducing Chemical Transport Selectivity into Gold Nanotubule Membranes J. Am. Chem. Soc. June 1998, Vol. 120, pages 6603-6604.	1-33
A	Jirage, K.B. et al. Effect of Thiol Chemisorption on the Transport Properties of Gold Nanotubule Membranes Anal. Chem. November 1999, Vol. 71, No. 21, pages 4913-4918.	1-33
A	Hou, Z. et al. Self-Assembled Monolayers on Electroless Gold Impart pH-Responsive Transport of Ions in Porous Membranes Langmuir December 1999, Vol. 16, pages 2401-2404.	1-33

☐ Further documents are listed in the continuation of Box C.

☐ See patent family annex.

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"A" document defining the general state of the art which is not considered to be of particular relevance	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
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"O" document referring to an oral disclosure, use, exhibition or other means	"&" document member of the same patent family
"P" document published prior to the international filing date but later than the priority date claimed	

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Mail Stop PCT, Attn: ISA/US
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

Facsimile No. (703) 305-3230

Authorized officer

Shrive P. Beck

Telephone No. (703) 308-0661

INTERNATIONAL SEARCH REPORT

PCT/IL04/00061

Continuation of Item 4 of the first sheet:

The title of the invention is not precise. The following new title has been provided:

METHOD FOR PREPARING NANOTUBES FROM NANOPARTICLES AND NANOTUBES PRODUCED THEREBY

Continuation of B. FIELDS SEARCHED Item 3:

EAST

American Chemical Society Journal Search

Elsevier Journal Search